

REMARKS

The Examiner has rejected Claims 1, 3-6, and 13-25 under 25 U.S.C. 103(a) as being unpatentable over Piatetsky-Shapiro (Shapiro), "Discovery, Analysis, and Presentation of Strong Rules," in "Knowledge Discovery in Database," AAAI/MIT Press, 1991, in view of *Simoudis, et al.*, U.S. Patent No. 5,692,107, and in further view of *Dash, et al.*, "Dimensionality Reduction of Unsupervised Data," Proceedings, Ninth IEEE International Conference on Tools with Artificial Intelligence, Nov. 1997. Applicants respectfully traverse such rejection.

Applicants respectfully request the Examiner to more specifically cite the part of the prior art relied upon to reject the claimed invention as required by 37 CFR 1.104. Applicants are unable to determine what the Examiner believes each reference teaches. The Examiner failed to establish that every limitation of the independent claims are taught by the prior art. Specifically, the Examiner provides only a cite to the comparing of attribute values without any mention of obtaining a target population. Additionally, the Examiner asserts that *Simoudis* teaches the selection of a data analysis module without indicating which claim limitation to which it applies. As the selection of a data analysis module is not a claim limitation, Applicants are unable to fully respond to the Examiner's rejection. Despite the above, Applicants have made a best effort to respond to the rejection.

The Examiner relies upon *Shapiro* to teach the claim limitation of "comparing said one or more desired attributes and respective values with said sample population *to obtain a target population*." First, Applicants point out that the reference is void of any teaching for obtaining a target population. The "target population" is an important claim element as a statistical measure of difference between attributes and respective values in the "target population" as compared to the sample population to "reducing the number of attributes and respective values of the sample population."

Further, *Shapiro* does not teach or suggest determining a statistical measure of difference between each of the attributes and respective values of the target population and sample population as recited in Claim 1. In the claimed invention, the selected target population is compared to the entire sample population to determine which attributes and respective values are most likely relevant in computing a predictive model. The comparison of a target population to the sample population yields different results than simply reducing a data set to a set of rules as in *Shapiro*. The results depend on the selected target group and not the population as a whole. Different target groups may result in a different selection of most relevant attributes. For example, a target group for the purchase of a type of pizza may show a strong correlation with age and no other attribute while the target group for the purchase of an expensive product may show a correlation with income.

Based on the Examiner's interpretation of *Shapiro*, the Examiner asserts that the "patterns of [the] full data set can be estimated by sample-derived rules with an estimated accuracy." Further, the Examiner indicates "a predictive model of [the] full data set can be generated by sample-derived rules with an estimated accuracy." Applicants are uncertain as to which claim limitation the above applies as the claims only recite in the preamble "reducing the number of attributes and respective values of a sample population employed in generating a predictive model." The assertion that a full data set may be estimated by sample-derived rules is only relevant in demonstrating a full, or "sample" as used in the present application, data set is nearly equivalent to a set of derived rules. Applicants are unable to determine which claim limitation to which the above applies.

Applicants believe the Examiner may be attempting to show how a predictive model may be obtained from a sample population. In discussing *Simoudis*, the Examiner indicates "[o]nce the user determined that the mining results are satisfactory based on the user's querier or hypothesis, a predictive model is extracted based on such results." Applicants remind the Examiner the present invention as claimed is not extracting a predictive model, but "reduc[ing] the number of attributes and respective values of said sample population" utilized in generating a predictive model.

In rejecting Claim 3, the Examiner relies upon *Dash* to teach using entropy as a statistical measure. The Examiner does not appear to use *Dash* in rejecting Claim 1. *Dash* teaches dimensionality reduction of unsupervised data and an entropy measure. *Dash* is silent regarding the reduction of variables based on a difference between the attributes and respective values of a target group and a sample population.

In rejecting a claim under § 103, the Examiner must find prior art that teaches every limitation of the claim(s) rejected. The combination of *Shapiro*, *Simoudis*, and *Dash* do not teach every claim limitation of the present invention. Most notably, the cited prior art lacks any teaching of determining a statistical measure of difference between the attributes and respective values of a target population and a sample population.

CONCLUSION

In light of the arguments presented, Applicants urge the Examiner to withdraw the rejections under § 103 and allow the application to proceed to allowance.

No fee is believed to be required; however, in the event any additional fees are required, please charge IBM Corporation Deposit Account No. 09-0447. No extension of time is believed to

be required; however, in the event any extension of time is required, please consider that extension requested and please charge any associated fee and any additional required fees, to IBM Corporation Deposit Account No. 09-0447.

Respectfully submitted,



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